

A High Speed, Low-Cost Process for the Demodulation and Detection in EDGE  
Wireless Cellular Systems

ABSTRACT OF DISCLOSURE

5           A process for signal detection in EDGE cellular systems is presented with the  
step of wireless channel estimation, a time-reversed signal processor, a soft-output  
Viterbi signal detector consisting of forward and reverse block processing, a MAP  
decoder that exchange soft information with the equalizer. Claim 1. A signal detection  
mechanism to demodulate received data frame that includes an accurate estimator to  
10 obtain channel responses, a forward filter and a FIR decision feedback filter to be used  
in soft-output equalizer, a time-reversal device storing received data in a time-reversed  
order for reverse block processing, an interference removal apparatus in both forward  
and reverse processing blocks,  
and a soft-input soft-output reduced state equalizer that utilizes the forward processing  
15 and reversed time processing blocks to generate iterative soft-output signals to the  
forward error correction decoder within the receiver system.